An Investigation of Crab Bank Trap Use in the Big Annemessex River, Maryland. 1998.

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Edward J. Webb III
Paul Piavis

Maryland Department of Natural Resources
Fisheries Service
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Introduction

Bank traps have been deployed in Chesapeake Bay to harvest blue crabs since at least the 1920s. Bank traps are set perpendicular to the shoreline and are composed of a single row of hedging which can legally be no more than 75 feet in length leading to a trap or box which can legally be no more than 4 feet long and 4 feet wide. The row of hedging may not exceed more than one-third the distance across the body of water in which the bank trap is placed. To permit air-breathing animals to survive, each trap must have at least 12 inches of air space between the surface of the water at mean high tide and the top of the trap (Figure 1). Bank traps cannot be set closer together than 300 feet, and the owner must remove the hedging and all stakes within 30 days after the box is removed, or by December 1, whichever is earlier.

In Maryland, bank traps are legal only in Somerset County, St. Mary's County and a portion of Kent County. In 1997, 175,218 pounds of hard crabs and 134,740 pounds of peelers and soft crabs were harvested in bank traps. These values represent 0.4% of the total hard crabs landings and 8.5% of the total soft and peeler crab landings with data for all gears combined statewide.

In the summer of 1998, the Department of Natural Resources received correspondence from landowners on the Big Annemessex River in which concern was expressed over the possible misuse of bank traps by commercial watermen and the legality of the way the traps are set and fished. Fisheries Service attempted to evaluate the biological questions raised in the letters by conducting a survey of bank traps in the Big Annemessex River. Questions relating to enforcement were investigated by the DNR Natural Resources Police.

Methods

Two watermen fishing bank traps in the Big Annemessex River, Phillip Marshall and Percy Bradshaw, were contacted in late September 1998 and asked if Maryland DNR personnel could accompany them when they fished their bank traps. The watermen both agreed but stated that they had already removed a large number of their traps due to low crab catches.

Bank traps fished by both commercial watermen were set perpendicular to the shoreline and were composed of 50 feet of hedging which ran from the shoreline out to the "heart" of the trap. The "heart" is a heart shaped hedging used to direct the crabs into the box, which is the containment portion of the trap.

The bank traps were fished by raising the boxes either by hand or with hydraulic winches. The contents were dumped on a culling board, sorted, and any undesired species were released (Figure 2). When Fisheries Service personnel accompanied the fishermen, data was taken for each trap fished on: (a) the number of marketable hard

crabs, peelers, soft crabs; (b) the number of sublegal crabs released; and (c) the number of legal and sublegal recreationally important finfish species caught (i.e. striped bass, weakfish, summer flounder, and white perch). In addition, the number and condition of non-targeted species caught in the traps such as diamond back terrapins, birds, or mammals were recorded. Notes were also made on the amount of airspace available at each trap and the water depth inside the boxes.

Results

On October 2, 1998 two Fisheries Service biologists accompanied Phillip Marshall on the Big Annemessex River to fish 19 bank traps. Mr. Marshall was in the process of removing his traps because catches were low. During the prime season he had as many as 51 traps set. The traps were constructed in such a way that the entire top was above the surface to allow ample space for air-breathing mammals, reptiles and birds to survive if captured. All of the traps were five feet tall and set in four feet of water or less. Air space, which was estimated for each trap, ranged from 12" - 28". The average air space was 15". Water depth inside the boxes averaged 24". In the sites where traps had been removed, the only evidence that a trap had existed in that spot was the stake on the shoreline with the license number of the fisherman.

Mr. Marshall did not keep any of the finfish to sell although some were of legal size. All individuals of the five species of finfish captured were released in good condition (Table 1.)

On October 9, 1998 Fisheries Service biologists accompanied Percy Bradshaw to fish 14 traps. Mr. Bradshaw was also in the process of removing traps due to low catches. The traps set by Mr. Bradshaw are visible from a residential area and may have been the traps which generated citizen concern. An elevated section of wire mesh measuring 15" x 15" x 15" was attached to the top of each box. These sections had been added because Natural Resources Police officers informed Mr. Bradshaw that some of the traps may not have had a sufficient amount of air space at mean high tide (Figure 3). The air space in the traps averaged 18" not including the "top hat". One trap, which was about 100 yards from a residential area, was not fished due to the low tide, but there appeared to be ample water in the trap (>18"). The only species harvested on October 9 was crabs (Table 2).

Concluding statements

The following statements summarize the results of the two day bank trap study by Maryland DNR Fisheries Service staff.

* All of the 33 traps sampled met the legal airspace requirement of 12" at mean high water.

* There were no birds in the traps.

- All species caught in the traps that were not harvested were released alive.

* All traps sampled had sufficient water depth in the box portion of the net to support fish and blue crabs.

- All traps fished had the fisherman's license number and his initials attached on a sign attached to one of the stakes supporting the trap.

* All traps sampled during the two day study period were separated by more than the legally required minimum distance (100 yards).

- At the sites where traps had previously been set, the only remaining evidence was a small sign with the license number of the fisherman to mark his site.

* All crabs harvested were legal.

* In an effort to minimize discard mortality, all fish were removed from the culling boards and released before the crabs caught in the net were processed.

* Fisheries Service personnel did not observe any dead fish in the 33 traps fished.

- Fisheries Service staff observed turtles, blue herons, several species of waterfowl, a bald eagle and shorebirds in the study area.

* Water temperature data collected at a site near the study area was unusually high, which may help explain the poor crabbing success reported by residents.

- Analysis of data collected by Fisheries Service personnel during the study period indicate that the abundance of blue crabs in the Wicomico River, which does not allow bank traps was also low (Table 3).

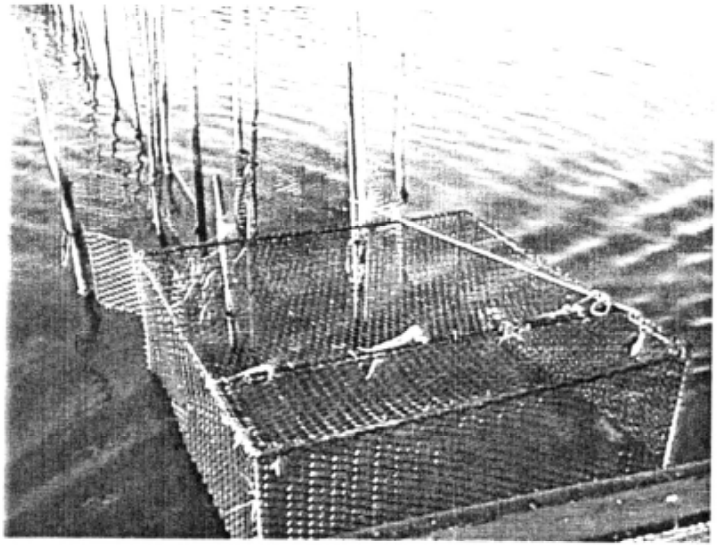

Figure 1

Figure 2

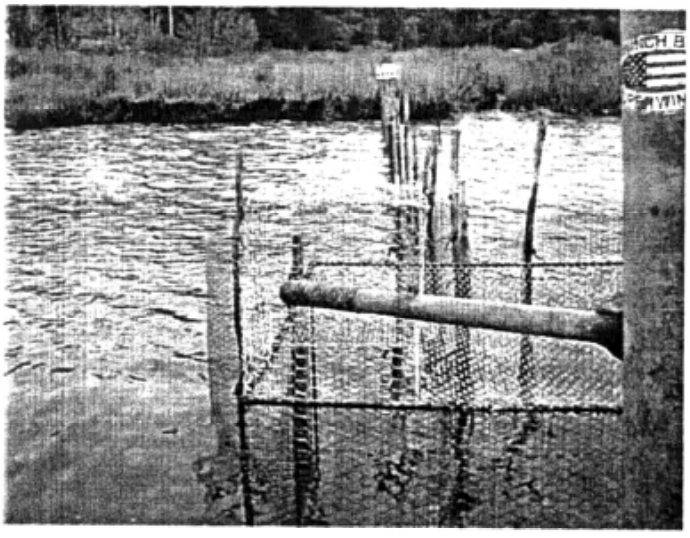

Figure 3

Table 1. Catch from crab bank traps fished on October 2, 1998. Big Annemessex River, Md. Combined totals for 19 traps.

SPECIES	# LEGAL	# SUBLEGAL	# HARVESTED	# RELEASED	CONDITION
WHITE PERCH	3	6	0	9	live
STRIPED BASS	12	2	0	14	live
SUMMER FLOUNDER	5	16	0	21	live
SPOT	12	0	0	12	live
DIAMONDBACK TERRAPIN			0	7	live
CRABS- HARD MARKETABLE	176	0	176	0	
CRABS-HARD UNDERSIZE	0	246	0	246	live
CRABS- SOFT	1	0	1	0	
CRABS-PEELERS	126	0	126	0	

Table 2. Catch from crab bank traps fished on October 9, 1998. Big Annemessex River, Md. Combined totals for 14 traps.

SPECIES	# LEGAL	# SUBLEGAL	# HARVESTED	# RELEASED	CONDITION
WHITE PERCH	10	49	0	59	live
STRIPED BASS	6	0	0	6	live
SUMMER FLOUNDER	2	29	0	31	live
SPOTTED SEATROUT	0	3	0	3	live
SPOT	6	0	0	6	live
DIAMONDBACK TERRAPIN			0	6	live
CRABS- HARD MARKETABLE	156	0	156	0	
CRABS-HARD UNDERSIZE	0	180	0	180	live
CRABS- SOFT	0	0	0	0	
CRABS-PEELERS	31	0	31	0	

Table 3. Comparison of crab catch between the Annemessex River in Somerset County and the Wicomico River in Wicomico County.

Bottom trawl:

MONTH	RIVER	
	ANNEMESSEX	WICOMICO
MAY	31	21
JUNE	13	61
JULY	12	32
AUGUST	4	42
SEPTEMBER	11	51
OCTOBER	2	12

Beach seine:

	RIVER	
	ANNEMESSEX	WICOMICO
MAY	5	3
JUNE	22	10
JULY	47	11
AUGUST	23	4
SEPTEMBER	73	44
OCTOBER	129	0